REMARKS

This application has been reviewed in light of the Office Action dated March 12, 2004. Claims 15-22 and 45-50 are presented for examination. Claims 1-14 and 23-44 have been canceled, without prejudice or disclaimer of subject matter. Claims 15, 18, 19, and 22 have been amended to define still more clearly what Applicants regard as their invention, and Claims 16, 17, 20, and 21 have been amended as to matters of form. Claims 45-50 have been added to provide Applicants with a more complete scope of protection. Claims 15, 19, 45, and 48 are in independent form. Favorable reconsideration is requested.

Applicants note with appreciation the indication that Claims 16, 17, 20, and 21 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. These claims have not been so rewritten because, for the reasons given below, their base claim is believed to be allowable.

Claims 15, 18, 19, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,614,914 (*Rhoads et al.*).

As shown above, Applicants have amended independent Claims 15 and 19 in terms that more clearly define what they regard as their invention. Applicants submit that these amended independent claims and new independent Claims 45 and 48, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 15 is a method of estimating an orientation angle of a local structure of a portion of an image, the portion of the image representing a region of the image having a substantially linear structure. The

method applies a complex energy operator to the portion of the image to provide an energy encoded image portion. A phase component of the energy encoded image portion is determined, and an estimation of the orientation angle of the local structure of the portion of the image is determined from the phase component of the energy encoded image portion.

Among other important features of Claim 15 is that it is the orientation angle of a local structure of a portion of an image that is determined. Accordingly, what is formed is an orientation angle for each portion in the image, with the orientation angle being the orientation of the local structure in that (small) portion.

Rhoads et al. relates to digital watermarking of media content such as images, audio, and video. *Rhoads et al.* discusses with reference to Fig. 14 a process for estimating scale and orientation of image blocks relative to a known watermark pattern. The image blocks are described in column 10, lines 7-9, with reference to Fig. 2, as blocks of image data in which a watermark is replicated in each of the blocks. The process starts with a number of filtering steps (952-954), followed by a Fast Fourier Transform (FFT) (956). *Rhoads et al.* discusses an alternative implementation in which only a phase signal of the FFT is retained for estimating a translation parameter of the orientation of the image block. As is acknowledged by the Examiner, *Rhoads et al.* fails to explicitly disclose a complex energy operator. Applicants submit that the watermark described by *Rhoads et al.* does not correspond to the complex energy operator of Claim 15, nor would it have been obvious for one skilled in the art at the time of the invention to "simply call the watermark as the complex energy operator", as asserted by the Examiner. The complex energy operator, as is described on page 14 of the specification, represents the total energy of the

local structure within a region of the image, with the total energy being the sum of the kinetic and potential energy components.[1] Watermarks have no relation to such a complex energy operator, and can therefore not be substituted for such an operator to obtain the desired result.

Nothing has been found in *Rhoads et al.* that would teach or suggest that it is the orientation angle of a local structure of a portion of an image that is determined by a method having steps as recited in Claim 15.

For at least the above reasons, Applicants submit that Claim 15 is clearly patentable over *Rhoads et al.*

Independent Claim 19 is an apparatus claim corresponding to method Claim 15, and is believed to be patentable for substantially the same reasons as discussed above in connection with Claim 1. Additionally, independent Claims 45 and 48 include features that are similar in many relevant respects to those discussed above in connection with Claim 15. Accordingly, Claims 45 and 48 are believed to be patentable for reasons substantially similar as those discussed above in connection with Claim 15.

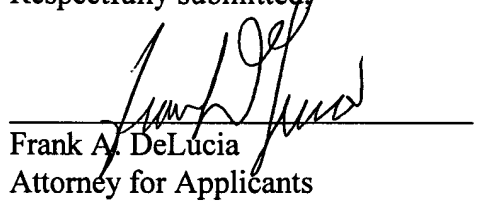
The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration or reconsideration, as the case may be, of the patentability of each on its own merits is respectfully requested.

1/It is to be understood, of course, that the claim scope is not limited by the details of the described embodiments, which are referred to only to facilitate explanation.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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